

**REMARKS**

Claims 1-3 and 5 are pending in this application. By this Amendment, claims 1 and 5 are amended. Support for the amended claims may be found in the original specification at, for example, Figures 1(1-4). No new matter is added.

Entry of the amendments is proper under 37 CFR §1.116 because the amendments:

(a) place the application in condition for allowance (for the reasons discussed herein); (b) do not raise any new issue requiring further search and/or consideration (as the amendments amplify issues previously discussed throughout prosecution); (c) satisfy a requirement of form asserted in the previous Office Action; (d) do not present any additional claims without canceling a corresponding number of finally rejected claims; and (e) place the application in better form for appeal, should an appeal be necessary. The amendments are necessary and were not earlier presented because they are made in response to arguments raised in the final rejection. Entry of the amendments is thus respectfully requested.

Reconsideration of the application is respectfully requested.

**Rejections Under 35 U.S.C. §112, First Paragraph**

The Patent Office rejected claim 5 under 35 U.S.C. §112, first paragraph, as allegedly including subject matter that is not described in the specification.

**"Simultaneously Masking" and "Integrating Them"**

The Patent Office alleged that the term "simultaneously" in the feature "planarly placing a small diameter α-SiC single crystal wafer previously formed as a wafer on a graphite plate and simultaneously masking a surface of a substrate" and the phrase "integrating them" in the feature "polycrystal SiC around the outer circumference of said wafer from its masking plane side and integrating them" do not have support in the specification.

Without conceding the propriety of the rejection, the terms "simultaneously" and "integrating them" are removed from claim 5.

**"Planarly Forming a Film Polycrystal SiC"**

The Patent Office alleges that the phrase "planarily forming a film of polycrystal SiC around an outer circumference of said wafer" in the feature "planarily forming a film of polycrystal SiC around an outer circumference of said wafer from its masking plane side and integrating them; and thereafter grinding" does not have support in the specification.

The phrase "and thereafter" is removed and replaced with the term "by." Thus, the feature now reads "planarily forming a film of polycrystal SiC around an outer circumference of said wafer from its masking plane side by grinding the polycrystal SiC." Thus, as the film of polycrystal SiC around the outer circumference is not planarily formed until after the grinding (see, e.g., page 6, lines 21-25 of the specification), the above feature is consistent with the specification.

Further, the Patent Office alleges that the above feature is not enabled because the original disclosure allegedly does not teach how to planarily form a film around an outer circumference of the wafer because the film is blanket deposited over the wafer and the mask layer, thus the film around the circumference of the wafer is sloped due to the presence of the raised surface of the wafer and a mask relative to the underlying graphite.

However, as the phrase "and thereafter grinding" is now removed and replaced with the phrase "by grinding," this rejection is overcome as the film of polycrystal SiC is clearly described to be planarily formed by grinding.

**Conclusion**

As such, reconsideration and withdrawal of the rejection under 35 U.S.C. §112, first paragraph, are respectfully requested.

**Rejection Under 35 U.S.C. §112, Second Paragraph**

The Patent Office rejected claim 5 under 35 U.S.C. §112, second paragraph, as allegedly being indefinite. In particular, the Patent Office alleges that the terms "its" and "them" in the phrase "polycrystal SiC around an outer circumference of said wafer from its masking plane side and integrating them" is unclear as to what the term "its" and "them" refer to.

Without conceding the propriety of the rejection, claim 5 is amended to replace the term "its" with the phrase "said wafer's." Further, as discussed above, the term "integrating them" is removed from claim 5.

As such, reconsideration and withdrawal of the rejection under 35 U.S.C. §112, second paragraph, are respectfully requested.

**Claim Rejections**

Claims 1 and 3 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 6,203,772 ("Tanino 772").

Claims 1 and 3 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 6,153,165 ("Tanino 165").

Claim 2 was rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Tanino 772 in view of Tanino 165, further in view of U.S. Patent No. 5,674,320 ("Kordina").

Applicants respectfully traverse each of the above rejections.

**Claim 1**

None of the applied references, alone or in combination, teach or suggest a large-diameter SiC wafer, wherein a diameter is increased as a double structure of single crystal SiC and polycrystal SiC by planarly forming a film of polycrystal SiC in a flat plate shape around an outer circumference of a small diameter  $\alpha$ -SiC single crystal wafer previously

formed as a wafer, and wherein a top and bottom surface of the small diameter  $\alpha$ -SiC single crystal wafer is free of the polycrystal SiC, as recited in claim 1.

Tanino 772 discloses a single crystal  $\alpha$ -SiC substrate 1 (alleged small diameter  $\beta$ -SiC single crystal wafer) having polycrystalline 2a' (alleged polycrystal SiC) over a top surface and part of each side surface, and Tanino 165 discloses a single crystal hexagonal  $\beta$ -SiC base material 1 (alleged small diameter  $\beta$ -SiC single crystal wafer) having polycrystalline cubic  $\alpha$ -SiC plate 2 (alleged polycrystal SiC) over a top surface and part of each side surface. Thus, each of Tanino 772 and Tanino 165 disclose polycrystals (alleged polycrystal SiC) on a top surface in contrast to claim 1 that requires a top surface to be free of polycrystal SiC. Thus, nowhere does Tanino 772 nor Tanino 165 teach or suggest wherein a top and bottom surface of a small diameter  $\alpha$ -SiC single crystal wafer is free of the polycrystal SiC, as required in claim 1.

For at least the foregoing reasons, claim 1, and dependent claims therefrom, are patentable over the applied references. Reconsideration and withdrawal of the rejections under 35 U.S.C. §102(b) and 35 U.S.C. §103(a) with respect to claim 1 are respectfully requested.

#### Claim 5

Further, the manufacturing method of claim 5 also includes the feature wherein a top and bottom surface of a small diameter  $\alpha$ -SiC single crystal wafer is free of the polycrystal SiC. Thus, for at least the same reasons presented above with respect to claim 1, claim 5 is also neither taught nor suggested by the applied references. As such, reconsideration and withdrawal of the rejections under 35 U.S.C. §102(b) and 35 U.S.C. §103(a) with respect to claim 5 are respectfully requested.

Kordina

The Patent Office relies on Kordina as allegedly disclosing a graphite plate. However, even if Kordina is relied on as disclosing this feature, Kordina fails to remedy the deficiencies of Tanino 772 and Tanino 165 in disclosing or rendering obvious the features of claims 1 and 5. In particular, Kordina fails to teach or suggest wherein a top and bottom surface of a small diameter β-SiC single crystal wafer is free of polycrystal SiC as recited in claims 1 and 5.

Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-3 and 5 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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